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THE FALCONES OF NORTH AMERICA.

BY REV. W. F. HENNINGER AND LYNDY JONES.

The reason for this proposed series of papers lies back of numerous personal requests from bird students who find the group difficult, especially in field identification, that something might be attempted in the way of descriptions to make the task easier or more certain. In presenting this first paper the writer (L. J.) does not feel any confidence that much has been done toward that end, for the reason that there is so much variation in color pattern within the species that anything less than a series of exceptionally well executed color plates must fail of giving a satisfactory impression of the species. In fact, one must needs spend a good deal of time with each species, scrutinizing every characteristic of flight, feeding habits, voice, — life history, in order to feel much certainty about some of the species. This first paper is presented at this time with a view to ascertaining whether enough is accomplished toward the ends desired to warrant a continuance along the same line, or whether changes ought to be made, and what changes. The authors therefore solicit criticisms and suggestions from every source.

It has been deemed best to present photographs of actual specimens rather than line drawings or made up pictures, giving in the pictures only the parts that are important in field identification. It is gratuitous to say that the difficulties of this method have not been fully met.

The arrangement of the species does not copy any method, but is one which, in the working out of the scheme, seems to the authors to be the most natural one. It is only fair for the writer (L. J.) to say that both the final arrangement and the most of the descriptive matter is the work of Mr. Henninger, to whose untiring energy the work is largely due.

FALCO ISLANDUS (*Brünn*).

WHITE GYRFALCON.

Geog. Distrib.

Arctic regions, including Arctic America and Greenland, accidental in British Columbia, Maine, Toronto; north to $81^{\circ}55'$; breeding in northern Greenland, Bering Island (lat. 55°), Ungava Bay Labrador, Tuxsuk River, Alaska.

Measurements.

Male; length 59.87 ctm; extent 129 to 140 ctm; wing 37 ctm; tail 23.61 ctm; tarsus 5.53 ctm; middle toe 5.05 ctm; culmen 2.34 ctm.

Female: length 59.80; wing 39.80; tail 25.38; tarsus 6.12; middle toe 5.32; culmen 2.59.

Diagnostic Marks.

Thighs and lower tail coverts pure white. Prevailing color of plumage white. Large size.

Plumage.

White, often pure, usually with dark markings. Adult: Top of head and neck narrowly streaked with dusky, upper parts more or less transversely spotted or barred with slatish dusky, lower parts no well defined markings.

Young: nestling like adults (Chapman, Auk XVII, p. 387).

Flight and Habits.

Flight elevated, rapid beats then a short sail. Bold, strikes its prey with bullet-like swiftness (Authors) — “endurance greater than swiftness, rather slow.” (Kumlien)—sitting like a Tern; carriage otherwise noble and striking; shy; attacks the Bald Eagle; molested by the Raven; living mostly in pairs, seldom gregarious. Formerly much used in falconry. Migrates at times.

Food.

All kinds of sea-birds, as auks, gulls, murre, sandpipers;

also rabbits, lemmings, hares, ptarmigans.

Voice.

A piercing, almost thrilling scream, "gyak."

Nest.

On inaccessible cliffs, in close vicinity of breeding waterfowl; composed of sticks, lined with moss, hay, hairs and feathers.

Eggs.

Laid end of May and in June, 2 to 4—60 x 48 mm 59.5 x 46.5 mm (Bendire); 60.45 x 43.8 mm (Davie); reddish white ground color marked with varying shades of red; texture rough.

Time of incubation unknown.

FALCO RUSTICOLUS (Linn).

GRAY GYRFALCON.

Two subspecies are included under this specific heading: *Gyrfalco*, (Linn.) the Gyrfalcon, and *obsoletus*, (Gmel.) the Black Gyrfalcon.

Geographical Distribution.

Gray Gyrfalcon: northern parts of the Arctic Region (except Norway and Sweden), breeding everywhere; occasionally south in winter to the Northern United States, British Columbia, Wisconsin.

Gyrfalcon: northern Europe, and in America from Labrador and Hudson's Bay to Alaska.

Black Gyrfalcon: coast of Labrador south to Canada, Maine, Rhode Island, and New York.

Measurements.

Gray Gyrfalcon: Male; length 52.32, wing 35.86, tail 21.67, culmen 2.29, tarsus 6.17, middle toe 5.03.

Female; length 59.69, wing 40.13, tail 24.77, culmen 2.54, tarsus 6.24, middle toe 5.23.

Gyr Falcon: Male; wing 34.42, tail 21.67, culmen 2.29, tarsus 5.99, middle toe 5.00.

Female; wing 39.37, tail 24.49, culmen 2.59, tarsus 6.32, middle toe 5.33.

Black Gyr Falcon: Male; wing 36.32, tail 21.97, culmen 2.29, tarsus 6.12, middle toe 4.92.

Female; wing 39.80, tail 24.94, culmen 2.59, tarsus 6.68, middle toe 5.33.

Diagnostic Marks.

Lower tail coverts always streaked with dusky (in contrast with *islandus*), upper parts with white never prevailing; lighter colored (but darker than *islandus*) is Gray Gyr Falcon, darker is Gyr Falcon, and the darkest form is Black Gyr Falcon.

Color Pattern.

Adult: Top of head much streaked with white, upper parts barred with blackish and grayish or buffy white, tail with sharply contrasting bars of light and dark, nearly equal in width; thighs and flanks always barred with some dusky.

Young: With much whitish above in spots, below with the dark stripes narrower than the white interspaces.

The Gyr Falcon has the head more dusky and the whole plumage with more extent of the dark markings.

The Black Gyr Falcon is still darker, with the darker markings prevailing so that the under parts appear dark.

Flight.

Apparently not distinguishable from that of the White Gyr Falcon.

Food.

Sea birds, ptarmigans, waders, rabbits, hares, squirrels, lemmings, mice.

Voice.

Ky ak, ke a, ke a, ke a, increasing in rapidity.

Nest.

On ledge of cliffs, on the sides of ravines, and similar places, also in the tops of tall trees, usually pines, composed of sticks and small branches, lined with moss, hay, hair, feathers, etc.

Eggs.

Three or four, laid from May 10 to the middle of June. Texture rough. Ovate. White or creamy ground color which is scarcely distinguishable beneath the spots and blotches of various shades of reddish brown, clay and fawn color, the markings are small. Size 59.5 x 45 mm (*gyrfalco*), 57.4 x 45.1 mm. (*obsoletus*) (Bendire).

FALCO PEREGRINUS (*Tunst.*).

PEREGRINE FALCON.

Three forms are grouped under this heading, according to the latest ruling of the committee on nomenclature. These are the Peregrine Falcon, with scientific name as above, *F. p. anatum* (Bonap.), Duck Hawk, and *F. p. pealei* Ridgway Peale's Falcon.

Peregrine Falcon: Eastern Hemisphere, Greenland.

Duck Hawk: North and South American south to Chili (as the name *peregrinus* is intended to indicate, a great wanderer); breeding locally throughout the United States, Labrador, Hudson's Bay, and British Columbia.

Peale's Falcon: Pacific Coast from Oregon and Washington to the Aleutian and Commander Islands, this also forming the breeding range.

Measurements.

Peregrine Falcon and Duck Hawk: Male, length 42.72, wing 31.07, tail 17.46, culmen 1.96, tarsus 4.42, middle toe 4.92.

Female, length 48.79, wing 36.27, tail 20.85, culmen 2.41, tarsus 5.31, middle toe 5.41.

Peale's Falcon: Male, wing 32.89, tail 17.15, culmen 2.13, tarsus 4.92, middle toe 4.85.

Female, wing 37.23, tail 19.91, culmen 2.44, tarsus 5.48, middle toe 5.41.

Diagnostic Marks.

Black moustache, bluish-gray back, long pointed wings, swift flight.

Color Pattern.

Adult: top of head deep black, darker than the back, which is bluish ash, underparts cream color forward, buffy backward; spotted with tear shaped or crescentic black or dark marks forward running into bars backward.

Young: ground color of lower parts ochreous with sooty brown stripes where the adults have crescentic marks and bars; upper parts sooty brown.

Peregrine Falcon is more marked below, Duck Hawk less so or immaculate, while Peale's Falcon has the color of the top of the head the same as the back, and usually more heavily marked below.

Flight and Habits.

These are bold birds, seeming to have little fear of man, indeed daring to dart in and snatch the bird just killed almost from beneath the hunter's hand. The flight is almost incredibly swift when prey is being pursued. At times soaring and rising to great heights is practiced. At the nest these birds are noisy and shy, at other times usually quiet. They become attached to certain localities.

Food.

Almost any birds up to the size of ducks and grouse, hares, poultry, dragon-flies.

Voice.

Ka yak, ka yak—kea kea. Often a cackling noise.

Nest.

On cliffs or in the hollow limbs of very tall trees. Nest

composed of a few bits of twigs, rotten wood, with a little moss, wool, or feathers.

Eggs.

From three to five, laid from March to July, depending on the latitude. The eggs are rounded ovate, creamy white or buffy, spotted with cinnamon brown, reddish brown, or chocolate. Size about 52 x 42.2 mm. The eggs vary greatly in color and size. Incubation lasts about 28 days, both parents sharing.

FALCO MEXICANUS (*Schleg*).

PRAIRIE FALCON.

Geographical Distribution.

United States, from the eastern border of the plains, and from the Dakotas south into Mexico; casual eastward to Illinois. Breeds throughout the United States range.

Measurements.

Male: Length 43, wing 30.86, tail 17.15, culmen 1.97, tarsus 4.45, middle toe 4.86.

Female: Length 48.26, wing 35.24, tail 20.19, culmen 2.35, tarsus 5.53, middle toe 5.46.

Diagnostic Marks.

A blackish patch on the side of the throat, distinctly streaked under parts, and a gray-brown back. Strong, quick, dashing flight.

Color Pattern.

Adult: Top of head sooty black, or deep black, distinctly darker than the back; under parts varying from pure white to creamy buff, distinctly but not heavily marked with blackish, rarely unmarked below.

Young: Lower parts more buffy and striped with dusky, upper parts with the colors obscured by brownish edgings of the feathers.

Flight.

Strong, easy, straight-away flight; swift, dashing descent for prey. It is doubtful if any other bird of prey is its equal in flight.

Food.

Birds of various kinds, up to the size of a meadowlark; rabbits, rodents of various sorts. They seem to prefer bird flesh, but during a scarcity of such diet may be driven to any of the smaller animals.

Nest.

On the ledges of cliffs or precipices, rarely in open nests in trees. The ledge nests seem to be merely detritus and food leavings. Open nests in trees must necessarily be composed of twigs or weeds or other coarse material, whether placed there by bird or simply utilized after the departure of the original builder.

Eggs.

Three to five. The nesting time varies from late March in its southern range to early June northward. The eggs are on the average lighter in color than the eggs of any other Falcon except the Sparrow Hawk. The ground color is creamy white, rarely so completely overlaid as to be obscured. The markings are blotches and spots of different shades of reddish brown, tawny, and chocolate. The eggs average 53 x 41.5. (*Bendire*).

Next to the Sparrow Hawk this is the commonest of the hawks of the western regions. Without doubt it is harmful, at times markedly so, but there is little doubt that it is also beneficial to a considerable degree. It has been known to kill Sharp-tailed Grouse. It seems to decidedly prefer the flesh of birds.

FALCO COLUMBARIUS (*Linn.*).

PIGEON HAWK.

Under this chapter are three races which have been given recognition. The extreme northwestern form, which is the darkest one is *F. c. suckleyi* (*Ridgway*) Black Merlin; the eastern form is typical *columbarius*, Pigeon Hawk, and is the median form, while the form occupying the middle western parts of the country, but ranging to the Pacific coast is *F. c. richardsonii* (*Ridgway*), Richardson's Merlin, it being the lightest, in conformance to its more desert habitat.

Geographical Distribution.

Pigeon Hawk, occupies the whole of the eastern part of North America east of the Rocky Mountains, breeding chiefly north of the United States, wintering south to northern South America; less common west of the mountains.

Black Merlin, is confined to the Pacific Coast region from northern California to Sitka, Alaska, ranging eastward in Washington and Oregon.

Richardson's Merlin, occupies the interior of North America, from the Mississippi River westward to the Pacific Coast, from the Saskatchewan region to Texas, Arizona, and Mexico.

Measurements.

Pigeon Hawk: Male; length 27.24, wing 17.80, tail 13.11, culmen 1.24, tarsus 3.43, middle toe 3.05.

Female: Length 31.81, wing 21.59, tail 13.72, culmen 1.45, tarsus 4.01, middle toe 3.42.

Black Merlin: Male; wing 19.76, tail 13.46, culmen 1.57, tarsus 3.30, (*Mrs. Eckstorm*).

Female: Wing 21.25, tail 14.60, culmen 1.47, tarsus 3.94, middle toe 3.50, (*Ridgway*).

Richardson's Merlin: Male; length 27.94, wing 20.24, tail 12.95, culmen 1.40, tarsus 3.76, middle toe 3.20.

Female; length 32.51, wing 22.73, tail 15.27, culmen 1.45, tarsus 3.45, middle toe 3.10.

Diagnostic Marks.

These are small, very dark hawks, heavily streaked with umber brown on the under parts, of swift flight, and sharply pointed wings which seem to reach forward to grasp the air.

Plumage.

Pigeon Hawk: Adult male; above dark slaty blue, with rusty edges and black shafts to the feathers, below whitish tawny, heavily streaked with dark umber brown which runs into bars on the flanks, and into fine pencilings on the throat and cheeks. Inner webs of the wing quills spotted or barred with white, outer webs with traces of grayish. Tail with four narrow white and four black bars, its tip white.

Adult female and young male; above dark umber brown, head with rusty edgings; below darker than the adult male. Wing spots and bars ochreous.

Black Merlin: Distinctly darker in general coloration.

Richardson's Merlin: Distinctly lighter in general coloration. Tail crossed with five blackish dusky and six bluish-gray bands.

Flight and Habits.

In flight the swiftest of the small hawks. When perched it sits erect and is alert, but seems less wary than most hawks. At its nest it is courageous and a fierce fighter.

Food.

Principally small birds, rarely mice and small squirrels.

Voice.

"Ke-ah, ke-ah, ke-ah," often repeated.

Nest.

In holes in trees, on cliffs, or in crotch of a tree. The nest is a bulky affair of sticks with a lining of soft bark, long hairs, dry grass, feathers, and moss. It sometimes fits an old crow nest over.

Eggs.

Four or five, varying greatly in form and markings, aver-

aging 41.31 mm.; creamy white, spotted with reddish, cinnamon, or chocolate, with a few heavier spots of the same colors. The eggs are laid in March to June, depending upon the latitude. Incubation lasts about 22 days.

FALCO ÆSALON (*Tunstall*).

MERLIN.

Geographical Distribution.

Europe, Asia, Africa. Accidental at Cape Farewell, Greenland (May 3, 1875).

Measurements.

Male: Length 27.96, wing 19.62, tail 13.21, culmen 1.19, tarsus 3.58, middle toe 2.92.

Female: Length 33.65, wing 22.43, tail 15.67, culmen 1.37, tarsus 3.71, middle toe 3.13.

Diagnostic Marks.

Above bluish-gray, beneath rusty with brownish stripes; black subterminal bar of closed tail. Flight.

Plumage.

Adult male: Upper parts bluish-gray with fine black shaft streaks, hind neck spotted with whitish and buffy, tail with 6 or 7 concealed black bands, tipped with white; cheeks with a distinct 'moustache.' Below light rusty streaked with brownish.

Adult female: Upper parts brownish, top of head with black streaks; tail with about eight narrow pale bands; lower parts more whitish or buffy with brownish streaks.

Flight and Habits.

A bold, swift and graceful hawk; hunts in pairs; is fond of soaring high in the air at times.

Food.

Mostly small birds, occasionally locusts and beetles.

Voice.

Ke ke ke ke, ki-ha, ki-ha.

Nest.

On ledges of cliffs, in trees, even on the ground; made of sticks, lined with moss, dry grass, and feathers.

Eggs.

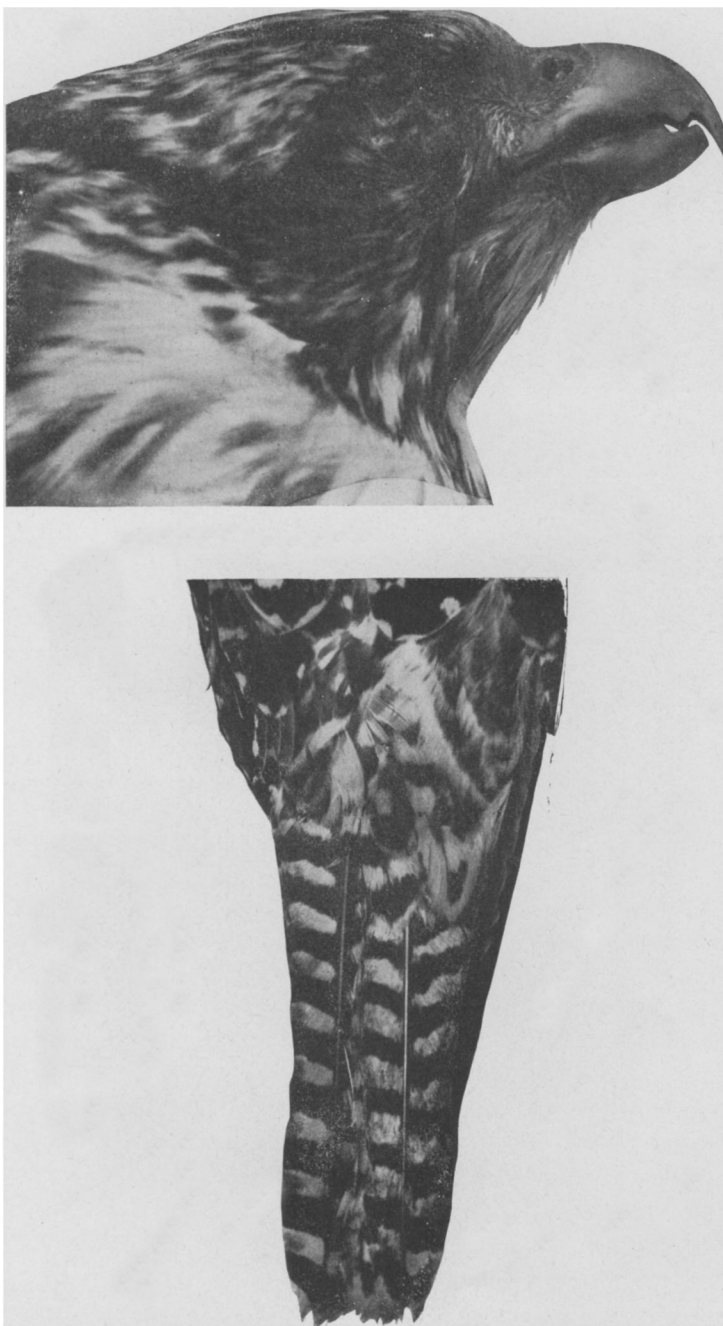
Three to six, laid in late May or June. 38 x 30 mm. Cream or clay-color, with many spots of reddish brown and blackish-brown, often entirely obscuring the ground color. Only one brood is raised.



Falco islandus, White Gyr Falcon, female. (No. 608 collection of W. F. H., February, 1906. Kangek, near Goodhab, Greenland.)



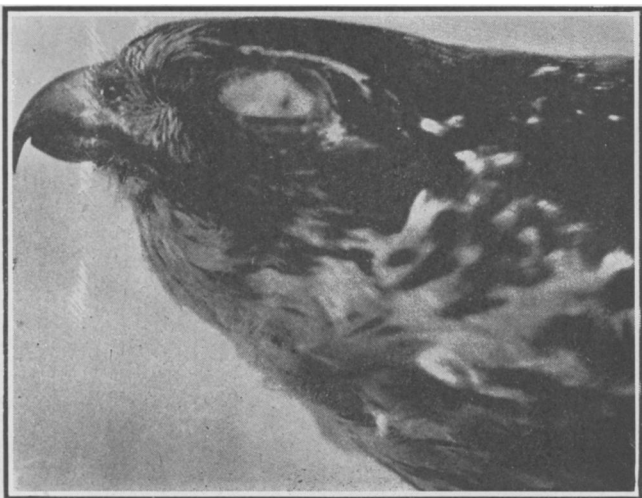
Falco islandus, White Gyrfalcon, female. (No. 608 collection of W. F. H., February, 1906, Kangek, near Goodhab, Greenland.)



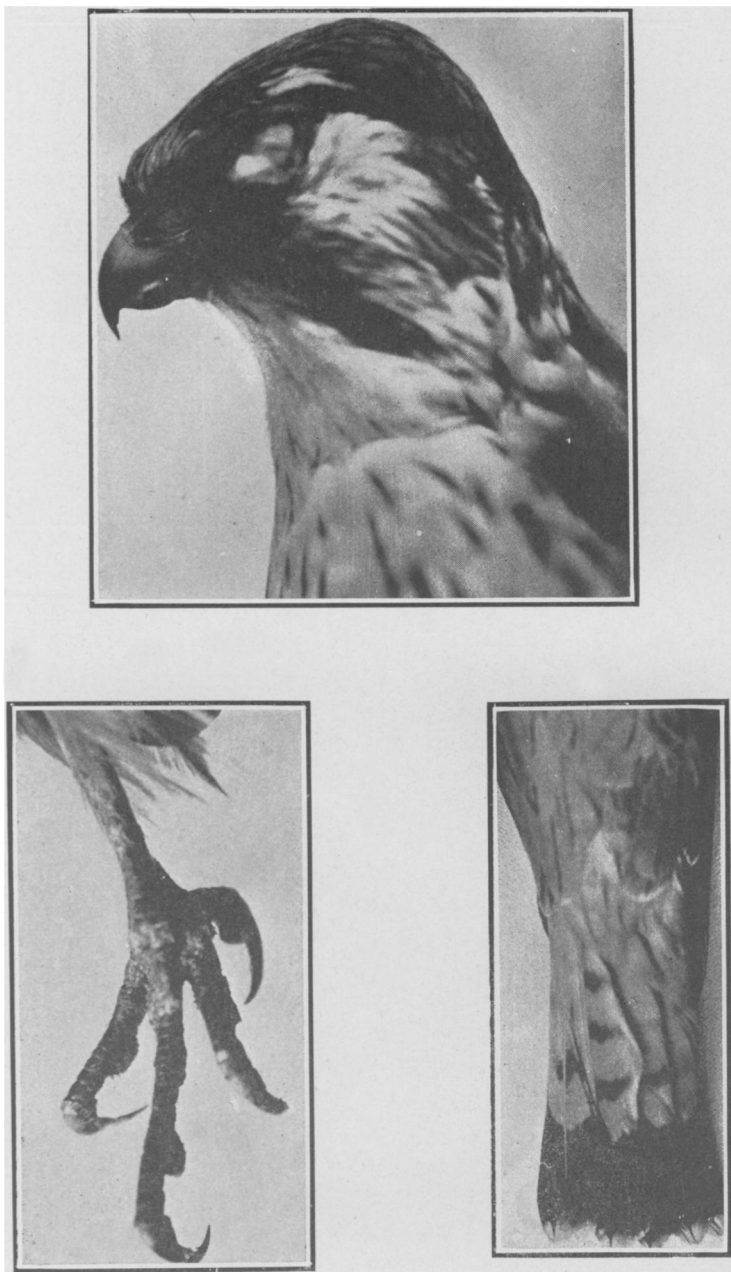
Falco rusticolus. Gray Gyr Falcon, female. (No. 607 collection of W. F. H., October 29, 1905, New Herruhut, Greenland.)



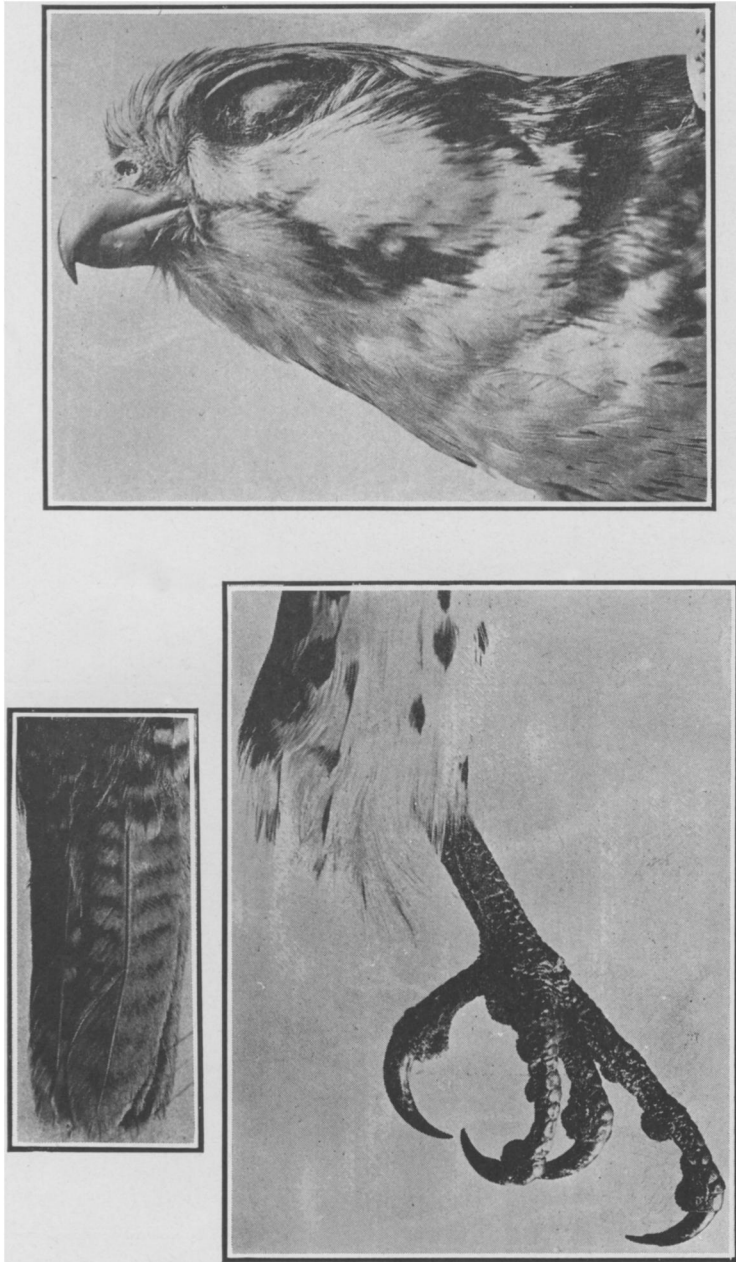
Falco peregrinus anatum, Duck Hawk, old male. (No. 624 collection of W. F. H., August 11, 1904, Cameron Co., Texas.)



Falco columbarius, Pigeon Hawk. (No. 520 collection of W. F. H., April 10, 1895, Cameron Co., Texas.)



Falco asalon, Merlin. (No. 615, collection of W. F. H., November 30, 1902 Wladikawas, Russia.)



Falco mexicanus, Prairie Falcon, male. (No. 3154 collection of Oberlin College, W. L. Dawson, April 3, 1896, Chelan, Wash.)